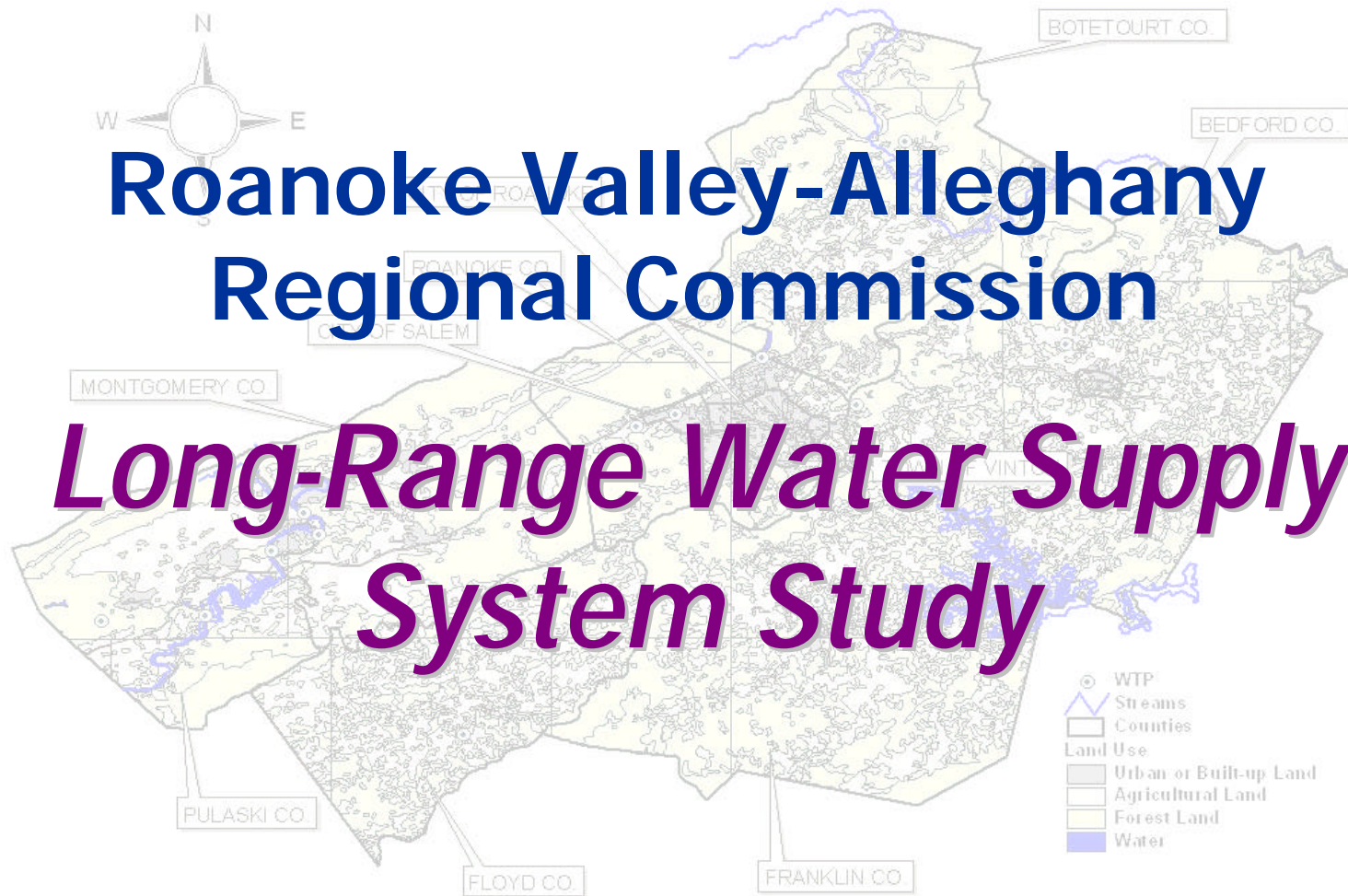




Roanoke Valley-Alleghany Regional Commission

Long-Range Water Supply System Study



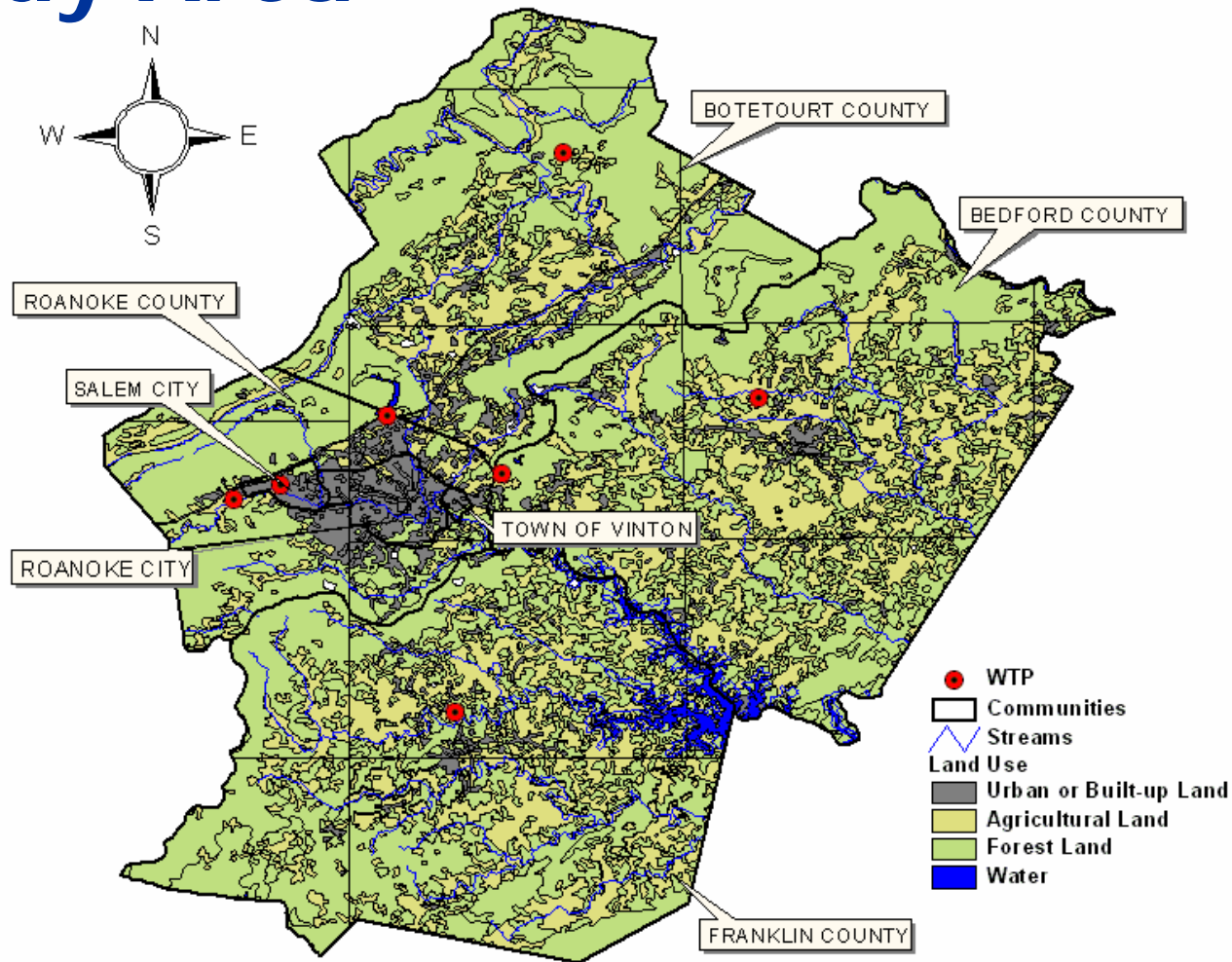
Study Overview

- Conducted by Black & Veatch Corporation
- Funded by the participating local governments and a grant from the Fifth Planning District Regional Alliance
- Coordinated by the Roanoke Valley-Alleghany Regional Commission
- Completed in 2003

Localities Involved in the Study

- Bedford County
- Botetourt County
- Franklin County
- Roanoke County
- City of Roanoke
- City of Salem
- Town of Vinton

Study Area

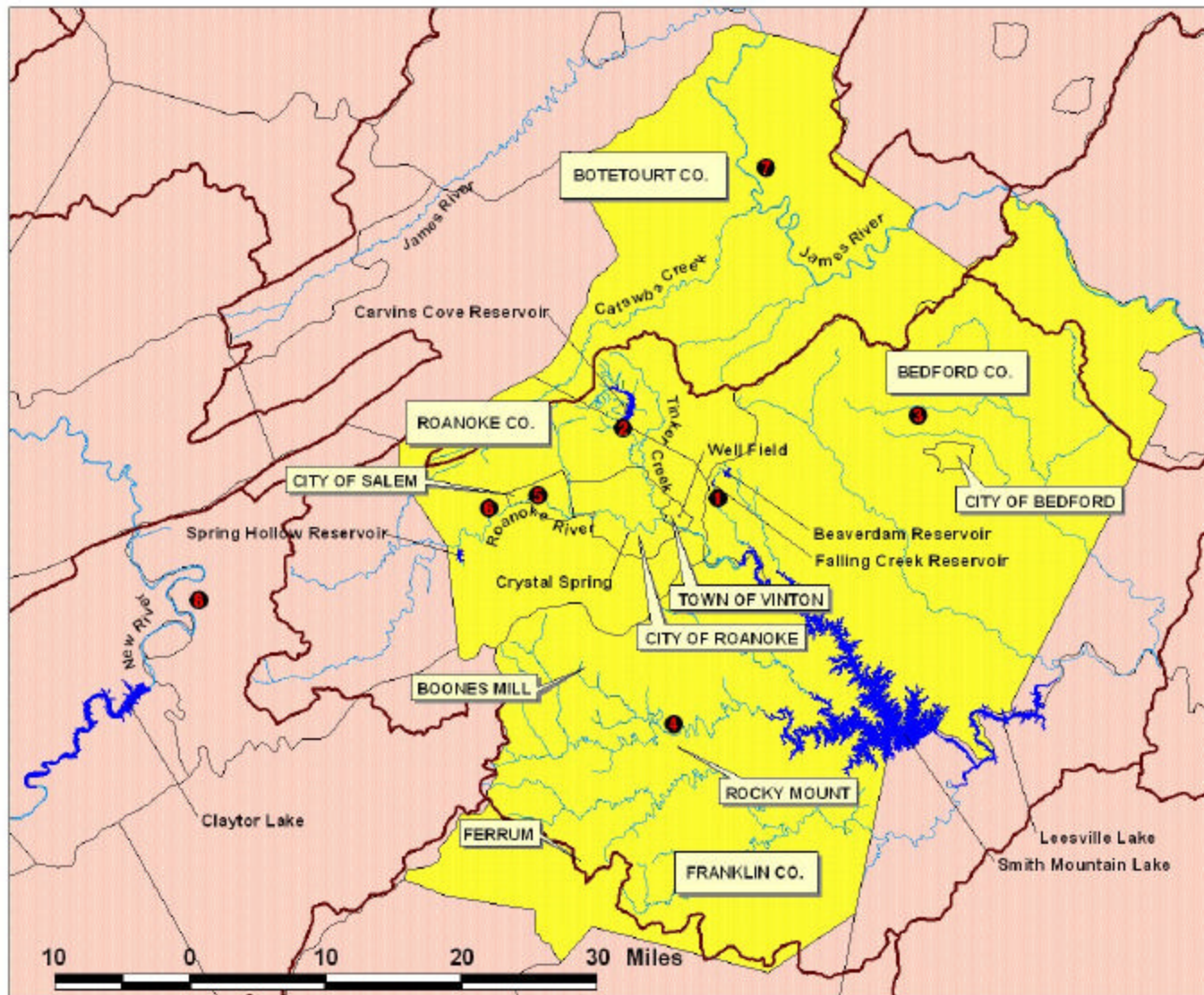


Scope of Water Supply Analysis

- Identify Water Supply Deficiencies
 - Obtain source water capacity information
 - Compare to current, 20-yr, 50-yr demands
- Identify Potential Additional Sources
 - Existing source expansion
 - Raw or treated water interconnections
 - New sources

Study Objectives

- Capacity of the Existing Water Supply Systems
- Current/Future Water Supply Needs
- Improvements Needed to the Systems
- Possible Future Water Supply Sources
- Options to Ensure Adequate Supply to the Valley Region through 2050



Water Treatment Plants

- 1 FALLING CREEK WTP
- 2 CARVIN COVE WTP
- 3 CITY OF BEDFORD WTP
- 4 ROCKY MOUNT WTP
- 5 SALEM WTP
- 6 GLENVAR WTP
- 7 EAGLE ROCK WATER CO
- 8 BCVPI WTP

Water Supplies

Beaverdam Reservoir /
Falling Creek Reservoir
Carvins Cove Reservoir
Claytor Lake
Crystal Spring
Leesville Lake
Roanoke River
Smith Mountain Lake
Spring Hollow Reservoir
Well Field

Table 4.1
Regional Population Projections

Locality	Population					
	2000	2010	2020	2030	2040	2050
Bedford County	58,900	71,601	84,302	97,003	109,704	122,405
Botetourt County	29,799	34,302	38,805	43,308	47,811	52,314
Franklin County	46,802	53,797	60,792	67,787	74,782	81,777
Roanoke County	84,710	89,800	94,890	99,980	105,070	110,160
City of Roanoke	95,596	94,500	94,500	94,500	94,500	94,500
City of Salem	24,792	25,897	27,002	28,107	29,212	30,317
Total	340,599	369,897	400,291	430,685	461,079	491,473

Table 6.1
Estimated 2050 Surplus/Deficit by Locality

	Raw Water Surplus/Deficit Based on Average Daily Demand (mgd)	Raw Water Surplus/Deficit Based on Peak Day Demand (mgd)	Finished Water Surplus/Deficit (mgd)
Bedford County	-4.6	-9.0	-9.5
Botetourt County	-4.2	-7.4	-7.4
Franklin County	-1.8	-4.0	-4.0
Roanoke County	-0.7	-2.6	-10.1
City of Roanoke	-0.9	-3.2	+3.0
City of Salem	+2.0	-2.0	-2.0
Town of Vinton	+2.4	+1.4	+1.4

Primary Alternatives Considered

1. Augmentation of the Spring Hollow System
 2. Augmentation of the Carvins Cove Reservoir System
 3. Expansion of the existing BCPSA Water Plant or construction of a new regional water treatment plant on Smith Mountain Lake
- Refer to Summary Table 5 - Summary of Cost Estimates for Alternatives to meet 2050 Demands

Other Alternatives

1. New reservoir sites throughout the region
2. Groundwater supply
3. Conservation and demand management
4. Water reuse

Regional Considerations

- Refer to page 11 of the Summary

Study Recommendations

- Refer to page 12 of the Summary

Obtaining Copies of the Study

- The complete *Long-Range Water Supply System Study* is available at <http://www.rvarc.org/work/water.pdf>
- The *Long-Range Water Supply System Study: Summary of Alternatives and Recommendations* is available at <http://www.rvarc.org/water/summary.pdf>

Questions or Comments?



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